

SEQUENCE LISTING

<110> Yan et al.

<120> SUBSTRATES AND ASSAYS FOR BETA-SECRETASE ACTIVITY

<130> 29915/00281E

<140> To be assigned

<141> 2004-03-16

<150> 09/908,943

<151> 2001-07-19

<150> 60/219,795

<151> 2000-07-19

<160> 197

<170> PatentIn Ver. 2.0

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<212> DNA

<213> Homo sapiens

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Gly Leu Gly Gly Ala Pro Leu Gly Leu Arg Leu Pro Arg Glu Thr Asp
          35          40          45
Glu Glu Pro Glu Glu Pro Gly Arg Arg Gly Ser Phe Val Glu Met Val
          50          55          60
Asp Asn Leu Arg Gly Lys Ser Gly Gln Gly Tyr Tyr Val Glu Met Thr
          65          70          75          80
Val Gly Ser Pro Pro Gln Thr Leu Asn Ile Leu Val Asp Thr Gly Ser
          85          90          95
Ser Asn Phe Ala Val Gly Ala Ala Pro His Pro Phe Leu His Arg Tyr
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Tyr Gln Arg Gln Leu Ser Ser Thr Tyr Arg Asp Leu Arg Lys Gly Val
          115          120          125
Tyr Val Pro Tyr Thr Gln Gly Lys Trp Glu Gly Glu Leu Gly Thr Asp
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Leu Val Ser Ile Pro His Gly Pro Asn Val Thr Val Arg Ala Asn Ile
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Glu Gly Ile Leu Gly Leu Ala Tyr Ala Glu Ile Ala Arg Pro Asp Asp
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Ser Leu Glu Pro Phe Phe Asp Ser Leu Val Lys Gln Thr His Val Pro
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 35 40 45
 Glu Glu Pro Glu Glu Pro Gly Arg Arg Gly Ser Phe Val Glu Met Val
 50 55 60
 Asp Asn Leu Arg Gly Lys Ser Gly Gln Gly Tyr Tyr Val Glu Met Thr
 65 70 75 80
 Val Gly Ser Pro Pro Gln Thr Leu Asn Ile Leu Val Asp Thr Gly Ser
 85 90 95
 Ser Asn Phe Ala Val Gly Ala Ala Pro His Pro Phe Leu His Arg Tyr
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 Tyr Gln Arg Gln Leu Ser Ser Thr Tyr Arg Asp Leu Arg Lys Gly Val
 115 120 125
 Tyr Val Pro Tyr Thr Gln Gly Lys Trp Glu Gly Glu Leu Gly Thr Asp
 130 135 140
 Leu Val Ser Ile Pro His Gly Pro Asn Val Thr Val Arg Ala Asn Ile
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 Ala Ala Ile Thr Glu Ser Asp Lys Phe Phe Ile Asn Gly Ser Asn Trp
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 Glu Gly Ile Leu Gly Leu Ala Tyr Ala Glu Ile Ala Arg Leu Cys Gly
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| Pro Lys Lys Val Phe Glu Ala Ala Val Lys Ser Ile Lys Ala Ala Ser 275 280 285 | | |
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| Cys Trp Gln Ala Gly Thr Thr Pro Trp Asn Ile Phe Pro Val Ile Ser 305 310 315 320 | | |
| Leu Tyr Leu Met Gly Glu Val Thr Asn Gln Ser Phe Arg Ile Thr Ile 325 330 335 | | |
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| Asp Cys Gly Tyr Asn Ile Pro Gln Thr Asp Glu Ser Thr Leu Met Thr 420 425 430 | | |
| Ile Ala Tyr Val Met Ala Ala Ile Cys Ala Leu Phe Met Leu Pro Leu 435 440 445 | | |
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<223> Xaa=cysteic acid

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<223> Xaa= any amino acid

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<210> 23
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<210> 24
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<210> 46

<211> 14

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<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 46

Lys Val Glu Ala Asn Tyr Asp Val Glu Gly Glu Arg Lys Lys
1 5 10

<210> 47

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
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<400> 47

Lys Val Glu Ala Asn Leu Ala Val Glu Gly Glu Arg Lys Lys
1 5 10

<210> 48

<211> 14

<212> PRT
<213> Artificial Sequence

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peptide sequence

<400> 48
Lys Val Glu Ala Leu Tyr Ala Val Glu Gly Glu Arg Lys Lys
1 5 10

<210> 49
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<400> 49
Xaa Ala Asn Tyr Glu Val Glu Phe
1 5

<210> 50
<211> 8
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<220>
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peptide sequence

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<400> 50
Glu Xaa Asn Tyr Glu Val Glu Phe
1 5

<210> 51
<211> 8
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<220>
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peptide sequence

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<400> 51
Glu Ala Xaa Tyr Glu Val Glu Phe
1 5

<210> 52
<211> 8
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<220>
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peptide sequence

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<400> 52
Glu Ala Asn Xaa Glu Val Glu Phe
1 5

<210> 53
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<220>
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peptide sequence

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<400> 53
Glu Ala Asn Tyr Xaa Val Glu Phe
1 5

<210> 54
<211> 8
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peptide sequence

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<400> 54
Glu Ala Asn Tyr Glu Xaa Glu Phe
1 5

<210> 55

<211> 8
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peptide sequence

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<400> 55
Glu Ala Asn Tyr Glu Val Xaa Phe
1 5

<210> 56
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<400> 56
Glu Ala Asn Tyr Glu Val Glu Xaa
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<210> 57
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<400> 57
Xaa Val Leu Leu Ala Ala Gly Trp
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<210> 58
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<400> 58

Gly Xaa Leu Leu Ala Ala Gly Trp
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<210> 59

<211> 8

<212> PRT

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<400> 59

Gly Val Xaa Leu Ala Ala Gly Trp
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<210> 60

<211> 8

<212> PRT

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<400> 60

Gly Val Leu Xaa Ala Ala Gly Trp
1 5

<210> 61

<211> 8

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<400> 61
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<210> 62
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<400> 62
Gly Val Leu Leu Ala Xaa Gly Trp
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<210> 63
<211> 8
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<400> 63
Gly Val Leu Leu Ala Ala Xaa Trp
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<210> 64
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<220>
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<400> 64
Gly Val Leu Leu Ala Ala Gly Xaa
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<210> 65

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<400> 65
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<210> 66
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peptide sequence

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<400> 66
Ile Xaa Lys Met Asp Asn Phe Gly
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<210> 67
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peptide sequence

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<400> 67
Ile Ile Xaa Met Asp Asn Phe Gly
1 5

<210> 68
<211> 8
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peptide sequence

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<400> 68
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1 5

<210> 69
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<400> 69
Ile Ile Lys Met Xaa Asn Phe Gly
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<210> 70
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<210> 72

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<400> 72

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1 5

<210> 73

<211> 10

<212> PRT

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<400> 73

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<210> 74

<211> 10

<212> PRT

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<400> 74

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<210> 75
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<400> 75
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<210> 76
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<400> 76
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1 5 10

<210> 78
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<222> (8)

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Asp Ser Ser Asn Leu Glu Met Xaa His Ala
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<210> 79

<211> 9

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<211> 9

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<400> 80

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<210> 81

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<222> (7)

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<400> 81

Xaa His Gly Phe Gln Leu Xaa His
1 5

<210> 82

<211> 8

<212> PRT

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peptide sequence

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Thr Xaa Gly Phe Gln Leu Xaa His
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<210> 83

<211> 8

<212> PRT

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peptide sequence

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<400> 83

Thr His Xaa Phe Gln Leu Xaa His
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<211> 8

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Thr His Gly Xaa Gln Leu Xaa His
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<211> 8

<212> PRT

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<223> Xaa= cysteic acid

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Thr His Gly Phe Gln Xaa Xaa His
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<210> 87

<211> 8

<212> PRT

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peptide sequence

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<210> 88

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<210> 90
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<210> 91
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Xaa Tyr Xaa His Ser Phe Ser Pro
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1 5

<210> 93
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<210> 94
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1 5

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1 5

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Ser Xaa Asp Xaa Gly Ser Xaa Gly
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<210> 99

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peptide sequence

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<222> (5)

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Ser Thr Asp Xaa Xaa Ser Xaa Gly
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<222> (6)

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<222> (7)

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<210> 104

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<221> SITE
<222> (5)..(7)
<223> Xaa= any amino acid

<400> 108
Xaa Phe Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 109
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)
<223> Xaa = any amino acid

<220>
<221> SITE
<222> (5)
<223> Xaa= E, A, D, M, Q, S or G

<220>
<221> SITE
<222> (6)..(7)
<223> Xaa= any amino acid

<400> 109
Xaa Phe Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 110
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)..(5)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (6)
<223> Xaa= V, A, N, T, L, F or S

<220>
<221> SITE
<222> (7)
<223> Xaa= any amino acid

<400> 110
Xaa Phe Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 111
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)..(6)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (7)
<223> Xaa= E, G, F, H, cysteic acid or S

<400> 111
Xaa Phe Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 112
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)..(7)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (8)
<223> Xaa= F, W, G, A, H, P, G, N or S

<400> 112
Xaa Phe Ala Xaa Xaa Xaa Xaa Xaa
1 5

<210> 113
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 113
Glu Val Asn Leu Asp Ala Glu Phe Arg
1 5

<210> 114
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 114
Asp Tyr Lys Asp Asp Asp Lys
1 5

<210> 115
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 115
Ala Cys Gly Ser Glu Ser Met Asp Ser Gly Ile Ser Leu Asp Asn Lys
1 5 10 15

Trp

<210> 116
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 116
Trp Lys Lys Gly Ala Ile Ile Gly Leu Met Val Gly Gly Val Val Lys
1 5 10 15

Lys

<210> 117

<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 117
Ala Asn Leu Ser Thr Phe Ala Gln Pro Arg Arg
1 5 10

<210> 118
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 118
Tyr Arg Tyr Gln Ser His Asp Tyr Ala Phe Ser Ser Val Glu Lys Leu
1 5 10 15

Leu His Leu Gly Gly Cys
20

<210> 119
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 119
Tyr Arg Tyr Gln Ser His Asp Tyr Ala Phe Ser Ser Val Glu Lys Leu
1 5 10 15

Leu His Leu Gly Gly Cys
20

<210> 120
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 120
Lys Thr Ile Thr Leu Glu Val Glu Pro Ser
1 5 10

<210> 121
<211> 12

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (9)
<223> Xaa= cysteic acid

<400> 121
Val Glu Ala Leu Tyr Leu Val Cys Xaa Gly Glu Arg
1 5 10

<210> 122
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 122
Val Glu Ala Leu Tyr Leu Val Glu Gly Glu Arg
1 5 10

<210> 123
<211> 363
<212> PRT
<213> Homo sapiens

<220>
<223> galactosyltransferase

<400> 123
Met Ala Ser Lys Ser Trp Leu Asn Phe Leu Thr Phe Leu Cys Gly Ser
1 5 10 15
Ala Ile Gly Phe Leu Leu Cys Ser Gln Leu Phe Ser Ile Leu Leu Gly
20 25 30
Glu Lys Val Asp Thr Gln Pro Asn Val Leu His Asn Asp Pro His Ala
35 40 45
Arg His Ser Asp Asp Asn Gly Gln Asn His Leu Glu Gly Gln Met Asn
50 55 60
Phe Asn Ala Asp Ser Ser Gln His Lys Asp Glu Asn Thr Asp Ile Ala
65 70 75 80
Glu Asn Leu Tyr Gln Lys Val Arg Ile Leu Cys Trp Val Met Thr Gly
85 90 95
Pro Gln Asn Leu Glu Lys Lys Ala Lys His Val Lys Ala Thr Trp Ala
100 105 110
Gln Arg Cys Asn Lys Val Leu Phe Met Ser Ser Glu Glu Asn Lys Asp
115 120 125

Phe Pro Ala Val Gly Leu Lys Thr Lys Glu Gly Arg Asp Gln Leu Tyr
 130 135 140
 Trp Lys Thr Ile Lys Ala Phe Gln Tyr Val His Glu His Tyr Leu Glu
 145 150 155 160
 Asp Ala Asp Trp Phe Leu Lys Ala Asp Asp Asp Thr Tyr Val Ile Leu
 165 170 175
 Asp Asn Leu Arg Trp Leu Leu Ser Lys Tyr Asp Pro Glu Glu Pro Ile
 180 185 190
 Tyr Phe Gly Arg Arg Phe Lys Pro Tyr Val Lys Gln Gly Tyr Met Ser
 195 200 205
 Gly Gly Ala Gly Tyr Val Leu Ser Lys Glu Ala Leu Lys Arg Phe Val
 210 215 220
 Asp Ala Phe Lys Thr Asp Lys Cys Thr His Ser Ser Ser Ile Glu Asp
 225 230 235 240
 Leu Ala Leu Gly Arg Cys Met Glu Ile Met Asn Val Glu Ala Gly Asp
 245 250 255
 Ser Arg Asp Thr Ile Gly Lys Glu Thr Phe His Pro Phe Val Pro Glu
 260 265 270
 His His Leu Ile Lys Gly Tyr Leu Pro Arg Thr Phe Trp Tyr Trp Asn
 275 280 285
 Tyr Asn Tyr Tyr Pro Pro Val Glu Gly Pro Gly Cys Cys Ser Asp Leu
 290 295 300
 Ala Val Ser Phe His Tyr Val Asp Ser Thr Thr Met Tyr Glu Leu Glu
 305 310 315 320
 Tyr Leu Val Tyr His Leu Arg Pro Tyr Gly Tyr Leu Tyr Arg Tyr Gln
 325 330 335
 Pro Thr Leu Pro Glu Arg Ile Leu Lys Glu Ile Ser Gln Ala Asn Lys
 340 345 350
 Asn Glu Asp Thr Lys Val Lys Leu Gly Asn Pro
 355 360

<210> 124

<211> 405

<212> PRT

<213> Homo sapiens

<220>

<223> Homo sapiens sialyltransferase 1

<400> 124

Ile His Thr Asn Leu Lys Lys Lys Phe Ser Cys Cys Val Leu Val Phe
 1 5 10 15

Leu Leu Phe Ala Val Ile Cys Val Trp Lys Glu Lys Lys Lys Gly Ser
 20 25 30

Tyr Tyr Asp Ser Phe Lys Leu Gln Thr Lys Glu Phe Gln Val Leu Lys

| 35 | | | | | 40 | | | | | 45 | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Gly | Lys | Leu | Ala | Met | Gly | Ser | Asp | Ser | Gln | Ser | Val | Ser | Ser |
| 50 | | | | | | 55 | | | | | 60 | | | | |
| Ser | Ser | Thr | Gln | Asp | Pro | His | Arg | Gly | Arg | Gln | Thr | Leu | Gly | Ser | Leu |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Arg | Gly | Leu | Ala | Lys | Ala | Lys | Pro | Glu | Ala | Ser | Phe | Gln | Val | Trp | Asn |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Lys | Asp | Ser | Ser | Ser | Lys | Asn | Leu | Ile | Pro | Arg | Leu | Gln | Lys | Ile | Trp |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Lys | Asn | Tyr | Leu | Ser | Met | Asn | Lys | Tyr | Lys | Val | Ser | Tyr | Lys | Gly | Pro |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Gly | Pro | Gly | Ile | Lys | Phe | Ser | Ala | Glu | Ala | Leu | Arg | Cys | His | Leu | Arg |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Asp | His | Val | Asn | Val | Ser | Met | Val | Glu | Val | Thr | Asp | Phe | Pro | Phe | Asn |
| 145 | | | | | | 150 | | | | | 155 | | | | 160 |
| Thr | Ser | Glu | Trp | Glu | Gly | Tyr | Leu | Pro | Lys | Glu | Ser | Ile | Arg | Thr | Lys |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Ala | Gly | Pro | Trp | Gly | Arg | Cys | Ala | Val | Val | Ser | Ser | Ala | Gly | Ser | Leu |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Lys | Ser | Ser | Gln | Leu | Gly | Arg | Glu | Ile | Asp | Asp | His | Asp | Ala | Val | Leu |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Arg | Phe | Asn | Gly | Ala | Pro | Thr | Ala | Asn | Phe | Gln | Gln | Asp | Val | Gly | Thr |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Lys | Thr | Thr | Ile | Arg | Leu | Met | Asn | Ser | Gln | Leu | Val | Thr | Thr | Glu | Lys |
| 225 | | | | | 230 | | | | | 235 | | | | 240 | |
| Arg | Phe | Leu | Lys | Asp | Ser | Leu | Tyr | Asn | Glu | Gly | Ile | Leu | Ile | Val | Trp |
| | | | 245 | | | | | 250 | | | | | 255 | | |
| Asp | Pro | Ser | Val | Tyr | His | Ser | Asp | Ile | Pro | Lys | Trp | Tyr | Gln | Asn | Pro |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Asp | Tyr | Asn | Phe | Phe | Asn | Asn | Tyr | Lys | Thr | Tyr | Arg | Lys | Leu | His | Pro |
| | 275 | | | | | | 280 | | | | | 285 | | | |
| Asn | Gln | Pro | Phe | Tyr | Ile | Leu | Lys | Pro | Gln | Met | Pro | Trp | Glu | Leu | Trp |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Asp | Ile | Leu | Gln | Glu | Ile | Ser | Pro | Glu | Glu | Ile | Gln | Pro | Asn | Pro | Pro |
| 305 | | | | | 310 | | | | | 315 | | | | 320 | |
| Ser | Ser | Gly | Met | Leu | Gly | Ile | Ile | Ile | Met | Met | Thr | Leu | Cys | Asp | Gln |
| | | | 325 | | | | | | 330 | | | | 335 | | |
| Val | Asp | Ile | Tyr | Glu | Phe | Leu | Pro | Ser | Lys | Arg | Lys | Thr | Asp | Val | Cys |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Tyr | Tyr | Tyr | Gln | Lys | Phe | Phe | Asp | Ser | Ala | Cys | Thr | Met | Gly | Ala | Tyr |
| | 355 | | | | | | 360 | | | | | 365 | | | |
| His | Pro | Leu | Leu | Tyr | Glu | Lys | Asn | Leu | Val | Lys | His | Leu | Asn | Gln | Gly |

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370                      375                      380
Thr Asp Glu Asp Ile Tyr Leu Leu Gly Lys Ala Thr Leu Pro Gly Phe
385                      390                      395                      400

Arg Thr Ile His Cys
405

<210> 125
<211> 518
<212> PRT
<213> Homo sapiens

<220>
<223> Homo sapiens aspartyl protease 1

<400> 125
Met Gly Ala Leu Ala Arg Ala Leu Leu Leu Pro Leu Leu Ala Gln Trp
 1                      5                      10                      15

Leu Leu Arg Ala Ala Pro Glu Leu Ala Pro Ala Pro Phe Thr Leu Pro
20                      25                      30

Leu Arg Val Ala Ala Ala Thr Asn Arg Val Val Ala Pro Thr Pro Gly
35                      40                      45

Pro Gly Thr Pro Ala Glu Arg His Ala Asp Gly Leu Ala Leu Ala Leu
50                      55                      60

Glu Pro Ala Leu Ala Ser Pro Ala Gly Ala Ala Asn Phe Leu Ala Met
65                      70                      75                      80

Val Asp Asn Leu Gln Gly Asp Ser Gly Arg Gly Tyr Tyr Leu Glu Met
85                      90                      95

Leu Ile Gly Thr Pro Pro Gln Lys Leu Gln Ile Leu Val Asp Thr Gly
100                     105                     110

Ser Ser Asn Phe Ala Val Ala Gly Thr Pro His Ser Tyr Ile Asp Thr
115                     120                     125

Tyr Phe Asp Thr Glu Arg Ser Ser Thr Tyr Arg Ser Lys Gly Phe Asp
130                     135                     140

Val Thr Val Lys Tyr Thr Gln Gly Ser Trp Thr Gly Phe Val Gly Glu
145                     150                     155                     160

Asp Leu Val Thr Ile Pro Lys Gly Phe Asn Thr Ser Phe Leu Val Asn
165                     170                     175

Ile Ala Thr Ile Phe Glu Ser Glu Asn Phe Phe Leu Pro Gly Ile Lys
180                     185                     190

Trp Asn Gly Ile Leu Gly Leu Ala Tyr Ala Thr Leu Ala Lys Pro Ser
195                     200                     205

Ser Ser Leu Glu Thr Phe Phe Asp Ser Leu Val Thr Gln Ala Asn Ile
210                     215                     220

Pro Asn Val Phe Ser Met Gln Met Cys Gly Ala Gly Leu Pro Val Ala
225                     230                     235                     240

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Gly Ser Gly Thr Asn Gly Gly Ser Leu Val Leu Gly Gly Ile Glu Pro
 245 250 255
 Ser Leu Tyr Lys Gly Asp Ile Trp Tyr Thr Pro Ile Lys Glu Glu Trp
 260 265 270
 Tyr Tyr Gln Ile Glu Ile Leu Lys Leu Glu Ile Gly Gly Gln Ser Leu
 275 280 285
 Asn Leu Asp Cys Arg Glu Tyr Asn Ala Asp Lys Ala Ile Val Asp Ser
 290 295 300
 Gly Thr Thr Leu Leu Arg Leu Pro Gln Lys Val Phe Asp Ala Val Val
 305 310 315 320
 Glu Ala Val Ala Arg Ala Ser Leu Ile Pro Glu Phe Ser Asp Gly Phe
 325 330 335
 Trp Thr Gly Ser Gln Leu Ala Cys Trp Thr Asn Ser Glu Thr Pro Trp
 340 345 350
 Ser Tyr Phe Pro Lys Ile Ser Ile Tyr Leu Arg Asp Glu Asn Ser Ser
 355 360 365
 Arg Ser Phe Arg Ile Thr Ile Leu Pro Gln Leu Tyr Ile Gln Pro Met
 370 375 380
 Met Gly Ala Gly Leu Asn Tyr Glu Cys Tyr Arg Phe Gly Ile Ser Pro
 385 390 395 400
 Ser Thr Asn Ala Leu Val Ile Gly Ala Thr Val Met Glu Gly Phe Tyr
 405 410 415
 Val Ile Phe Asp Arg Ala Gln Lys Arg Val Gly Phe Ala Ala Ser Pro
 420 425 430
 Cys Ala Glu Ile Ala Gly Ala Ala Val Ser Glu Ile Ser Gly Pro Phe
 435 440 445
 Ser Thr Glu Asp Val Ala Ser Asn Cys Val Pro Ala Gln Ser Leu Ser
 450 455 460
 Glu Pro Ile Leu Trp Ile Val Ser Tyr Ala Leu Met Ser Val Cys Gly
 465 470 475 480
 Ala Ile Leu Leu Val Leu Ile Val Leu Leu Leu Leu Pro Phe Arg Cys
 485 490 495
 Gln Arg Arg Pro Arg Asp Pro Glu Val Val Asn Asp Glu Ser Ser Leu
 500 505 510
 Val Arg His Arg Trp Lys
 515

<210> 126

<211> 255

<212> PRT

<213> Homo sapiens

<220>

<223> Homo sapiens syntaxin 6

<400> 126

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Met Ser Met Glu Asp Pro Phe Phe Val Val Lys Gly Glu Val Gln Lys
 1           5           10           15

Ala Val Asn Thr Ala Gln Gly Leu Phe Gln Arg Trp Thr Glu Leu Leu
          20           25           30

Gln Asp Pro Ser Thr Ala Thr Arg Glu Glu Ile Asp Trp Thr Thr Asn
          35           40           45

Glu Leu Arg Asn Asn Leu Arg Ser Ile Glu Trp Asp Leu Glu Asp Leu
          50           55           60

Asp Glu Thr Ile Ser Ile Val Glu Ala Asn Pro Arg Lys Phe Asn Leu
          65           70           75           80

Asp Ala Thr Glu Leu Ser Ile Arg Lys Ala Phe Ile Thr Ser Thr Arg
          85           90           95

Gln Val Val Arg Asp Met Lys Asp Gln Met Ser Thr Ser Ser Val Gln
          100          105          110

Ala Leu Ala Glu Arg Lys Asn Arg Gln Ala Leu Leu Gly Asp Ser Gly
          115          120          125

Ser Gln Asn Trp Ser Thr Gly Thr Thr Asp Lys Tyr Gly Arg Leu Asp
          130          135          140

Arg Glu Leu Gln Arg Ala Asn Ser His Phe Ile Glu Glu Gln Gln Ala
          145          150          155          160

Gln Gln Gln Leu Ile Val Glu Gln Gln Asp Glu Gln Leu Glu Leu Val
          165          170          175

Ser Gly Ser Ile Gly Val Leu Lys Asn Met Ser Gln Arg Ile Gly Gly
          180          185          190

Glu Leu Glu Glu Gln Ala Val Met Leu Glu Asp Phe Ser His Glu Leu
          195          200          205

Glu Ser Thr Gln Ser Arg Leu Asp Asn Val Met Lys Lys Leu Ala Lys
          210          215          220

Val Ser His Met Thr Ser Asp Arg Arg Gln Trp Cys Ala Ile Ala Ile
          225          230          235          240

Leu Phe Ala Val Leu Leu Val Val Leu Ile Leu Phe Leu Val Leu
          245          250          255

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<210> 127

<211> 1728

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: nucleic acid
encoding recombinant fusion protein

<400> 127

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atgctgctgc tgctgctgct gctgggcctg aggctacagc tctccctggg catcatccca 60
gttgaggagg agaaccgga cttctggaac cgcgaggcag ccgaggccct gggtgccgcc 120
aagaagctgc agcctgcaca gacagccgcc aagaacctca tcattcttct gggcgatggg 180

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atgggggtgt ctacgggtgac agctgccagg atcctaaaag ggacagaagaa ggacaaactg 240
gggcctgaga tacccttggc catggaccgc ttcccatatg tggctctgtc caagacatac 300
aatgtagaca aacatgtgcc agacagtggg gccacagcca cggcctacct gtgcgggggtc 360
aagggcaact tccagaccat tggcttgagt gcagccgccc gctttaacca gtgcaacacg 420
acacgcggca acgaggtcat ctccgtgatg aatcggggcca agaaagcagg gaagtcagtg 480
ggagtggtaa ccaccacacg agtgcagcac gcctcgccag ccggcaccta cggccacacg 540
gtgaaccgca actggtactc ggacgcccgc gtgcctgcct cggcccgcga ggaggggtgc 600
caggacatcg ctacgcagct catctccaac atggacattg acgtgaccc aggtggaggc 660
cgaaagtaca tgtttcccat gggaacccca gaccctgagt acccagatga ctacagccaa 720
ggtgggacca ggctggacgg gaagaatctg gtgcaggaat ggctggcgaa gcgccagggt 780
gcccggtatg tgtggaaccg cactgagctc atgcaggctt ccctggaccc gtctgtgacc 840
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gcttaccggg cactgactga gacgatcatg ttcgacgacg ccattgagag ggcgggccag 1080
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gacgccgcgc acccaggtaa ctatgaagtt gaattccgaa gagcactcta cgtagagggt 1560
gaaagaggat tcttctacac tccaaaggca ctctacctcg tagagggtga aagaggattc 1620
ttctacacta gtctcatgac catagcctat gtcattggctg ccatctgcgc cctcttcacg 1680
ctgccactct gcctcatggg ggactacaag gatgatgatg acaagtag 1728

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<210> 128

<211> 575

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: recombinant fusion protein sequence

<400> 128

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Met Leu Leu Leu Leu Leu Leu Leu Gly Leu Arg Leu Gln Leu Ser Leu
 1             5             10             15

Gly Ile Ile Pro Val Glu Glu Glu Asn Pro Asp Phe Trp Asn Arg Glu
 20             25             30

Ala Ala Glu Ala Leu Gly Ala Ala Lys Lys Leu Gln Pro Ala Gln Thr
 35             40             45

Ala Ala Lys Asn Leu Ile Ile Phe Leu Gly Asp Gly Met Gly Val Ser
 50             55             60

Thr Val Thr Ala Ala Arg Ile Leu Lys Gly Gln Lys Lys Asp Lys Leu
 65             70             75             80

Gly Pro Glu Ile Pro Leu Ala Met Asp Arg Phe Pro Tyr Val Ala Leu
 85             90             95

Ser Lys Thr Tyr Asn Val Asp Lys His Val Pro Asp Ser Gly Ala Thr
100            105            110

Ala Thr Ala Tyr Leu Cys Gly Val Lys Gly Asn Phe Gln Thr Ile Gly
115            120            125

Leu Ser Ala Ala Ala Arg Phe Asn Gln Cys Asn Thr Thr Arg Gly Asn
130            135            140

```


| | | | | | | | | | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Glu 145 | Val | Ile | Ser | Val | Met 150 | Asn | Arg | Ala | Lys | Lys 155 | Ala | Gly | Lys | Ser | Val 160 |
| Gly | Val | Val | Thr | Thr 165 | Thr | Arg | Val | Gln | His 170 | Ala | Ser | Pro | Ala | Gly | Thr |
| Tyr | Ala | His | Thr 180 | Val | Asn | Arg | Asn | Trp 185 | Tyr | Ser | Asp | Ala | Asp | Val | Pro |
| Ala | Ser | Ala 195 | Arg | Gln | Glu | Gly | Cys 200 | Gln | Asp | Ile | Ala | Thr 205 | Gln | Leu | Ile |
| Ser | Asn 210 | Met | Asp | Ile | Asp | Val 215 | Ile | Leu | Gly | Gly 220 | Gly | Arg | Lys | Tyr | Met |
| Phe 225 | Pro | Met | Gly | Thr 230 | Pro | Asp | Pro | Glu | Tyr | Pro 235 | Asp | Asp | Tyr | Ser | Gln 240 |
| Gly | Gly | Thr | Arg 245 | Leu | Asp | Gly | Lys | Asn | Leu 250 | Val | Gln | Glu | Trp | Leu | Ala |
| Lys | Arg | Gln 260 | Gly | Ala | Arg | Tyr | Val | Trp 265 | Asn | Arg | Thr | Glu | Leu 270 | Met | Gln |
| Ala | Ser | Leu 275 | Asp | Pro | Ser | Val | Thr 280 | His | Leu | Met | Gly | Leu 285 | Phe | Glu | Pro |
| Gly 290 | Asp | Met | Lys | Tyr | Glu | Ile 295 | His | Arg | Asp | Ser | Thr 300 | Leu | Asp | Pro | Ser |
| Leu 305 | Met | Glu | Met | Thr | Glu | Ala 310 | Ala | Leu | Arg | Leu 315 | Leu | Ser | Arg | Asn | Pro 320 |
| Arg | Gly | Phe | Phe 325 | Leu | Phe | Val | Glu | Gly | Gly 330 | Arg | Ile | Asp | His | Gly 335 | His |
| His | Glu | Ser | Arg 340 | Ala | Tyr | Arg | Ala | Leu 345 | Thr | Glu | Thr | Ile | Met 350 | Phe | Asp |
| Asp | Ala | Ile 355 | Glu | Arg | Ala | Gly | Gln 360 | Leu | Thr | Ser | Glu | Glu 365 | Asp | Thr | Leu |
| Ser 370 | Leu | Val | Thr | Ala | Asp | His 375 | Ser | His | Val | Phe | Ser 380 | Phe | Gly | Gly | Tyr |
| Pro 385 | Leu | Arg | Gly | Ser | Ser 390 | Ile | Phe | Gly | Leu | Ala 395 | Pro | Gly | Lys | Ala | Arg 400 |
| Asp | Arg | Lys | Ala 405 | Tyr | Thr | Val | Leu | Leu | Tyr 410 | Gly | Asn | Gly | Pro | Gly 415 | Tyr |
| Val | Leu | Lys | Asp 420 | Gly | Ala | Arg | Pro | Asp 425 | Val | Thr | Glu | Ser | Glu 430 | Ser | Gly |
| Ser | Pro | Glu 435 | Tyr | Arg | Gln | Gln | Ser 440 | Ala | Val | Pro | Leu | Asp 445 | Glu | Glu | Thr |
| His 450 | Ala | Gly | Glu | Asp | Val | Ala 455 | Val | Phe | Ala | Arg | Gly | Pro | Gln | Ala | His |
| Leu 465 | Val | His | Gly | Val | Gln 470 | Glu | Gln | Thr | Phe | Ile 475 | Ala | His | Val | Met | Ala 480 |

Phe Ala Ala Cys Leu Glu Pro Tyr Thr Ala Cys Asp Leu Ala Pro Pro
485 490 495

Ala Gly Thr Thr Asp Ala Ala His Pro Gly Asn Tyr Glu Val Glu Pro
500 505 510

Arg Arg Ala Leu Tyr Val Glu Gly Glu Arg Gly Phe Phe Tyr Thr Pro
515 520 525

Lys Ala Leu Tyr Leu Val Glu Gly Glu Arg Gly Phe Phe Tyr Thr Ser
530 535 540

Leu Met Thr Ile Ala Tyr Val Met Ala Ala Ile Cys Ala Leu Phe Met
545 550 555 560

Leu Pro Leu Cys Leu Met Val Asp Tyr Lys Asp Asp Asp Asp Lys
565 570 575

<210> 129
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 129
Lys Met Asp Ala Glu
1 5

<210> 130
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 130
Gly Arg Arg Gly Ser
1 5

<210> 131
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 131
Val Glu Ala Asn Tyr Glu Val Glu Gly Glu
1 5 10

<210> 132
<211> 10

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 132
Val Glu Ala Asn Tyr Ala Val Glu Gly Glu
1 5 10

<210> 133
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 133
Lys Thr Ile Asn Leu Glu Val Glu Pro Ser
1 5 10

<210> 134
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
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<222> (5)
<223> Nle

<400> 134
Lys Thr Ile Asn Xaa Glu Val Glu Pro Ser
1 5 10

<210> 135
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<221> MOD_RES
<222> (5)
<223> Nle

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 135
Lys Thr Ile Asn Xaa Glu Val Asp Pro Ser

1

5

10

<210> 136
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
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<222> (5)
<223> Nle

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 136
Lys Thr Ile Asn Xaa Asp Val Asp Pro Ser
1 5 10

<210> 137
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 137
Lys Thr Ile Ser Leu Asp Val Glu Pro Ser
1 5 10

<210> 138
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 138
Lys Thr Ile Ser Leu Asp Val Asp Pro Ser
1 5 10

<210> 139
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 139
Lys Met Asp Ala
1

<210> 140
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 140
Ser Tyr Glu Val
1

<210> 141
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 141
Ser Glu Val Ser Tyr Glu Val Glu Phe Arg
1 5 10

<210> 142
<211> 4
<212> PRT
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<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 142
Asn Leu Asp Ala
1

<210> 143
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 143
Ser Glu Val Ser Tyr Asp Ala Glu Phe Arg
1 5 10

<210> 144
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

peptide sequence

<400> 144

Ser Glu Val Ser Tyr Glu Ala Glu Phe Arg
1 5 10

<210> 145

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 145

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser
1 5 10 15

Glu Val Ser Tyr Glu Val Glu Phe Arg
20 25

<210> 146

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 146

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Val Ser Tyr Glu
1 5 10 15

Val Glu Phe Arg
20

<210> 147

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 147

Lys Thr Glu Glu Ile Ser Glu Val Ser Tyr Glu Val Glu Phe Arg
1 5 10 15

<210> 148

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 148

Thr Glu Val Ser Tyr Glu Val Glu Phe Arg
1 5 10

<210> 149

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 149

Ser Glu Val Asp Tyr Glu Val Glu Phe Arg
1 5 10

<210> 150

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 150

Thr Glu Val Asp Tyr Glu Val Glu Phe Arg
1 5 10

<210> 151

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 151

Thr Glu Ile Asp Tyr Glu Val Glu Phe Arg
1 5 10

<210> 152

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 152

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg
1 5 10

<210> 153

<211> 10

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 153
Ser Glu Ile Asp Tyr Glu Val Glu Phe Arg
1 5 10

<210> 154
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (11)
<223> Xaa=tryptophan

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 154
Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
1 5 10

<210> 155
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (16)
<223> Xaa=tryptophan

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 155
Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa
1 5 10 15

Lys Lys

<210> 156
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (21)
<223> Xaa=tryptophan

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 156

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val
1 5 10 15

Glu Phe Arg Xaa Lys Lys
20

<210> 157

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>

<221> SITE

<222> (26)

<223> Xaa=tryptophan

<400> 157

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser
1 5 10 15

Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
20 25

<210> 158

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (11)

<223> Xaa=tryptophan

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 158

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
1 5 10

<210> 159

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>

<221> SITE

<222> (16)

<223> Xaa=tryptophan

<400> 159

Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg
1 5 10 15

Xaa Lys Lys

<210> 160

<211> 23

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (21)

<223> Xaa=tryptophan

<220>

<223> Description of Artificial Sequence: synthetic
peptide

<400> 160

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr
1 5 10 15

Glu Val Glu Phe Arg Xaa Lys Lys
20

<210> 161

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (26)

<223> Xaa=tryptophan

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 161

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile
1 5 10 15

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
20 25

<210> 162

<211> 13

<212> PRT

<213> Artificial Sequence

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<221> SITE

<222> (11)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 162
Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
1 5 10

<210> 163
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
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<222> (16)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 163
Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa
1 5 10 15

Lys Lys

<210> 164
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (21)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 164
Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu
1 5 10 15

Val Glu Phe Arg Xaa Lys Lys
20

<210> 165
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE

<222> (26)

<223> Xaa=oregon green

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 165

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser
1 5 10 15

Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
20 25

<210> 166

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (11)

<223> Xaa=oregon green

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 166

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
1 5 10

<210> 167

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (16)

<223> Xaa=oregon green

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 167

Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg
1 5 10 15

Xaa Lys Lys

<210> 168

<211> 23

<212> PRT

<213> Artificial Sequence

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<221> SITE
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 <223> Xaa=oregon green

<220>
 <223> Description of Artificial Sequence: synthetic
 peptide sequence

<400> 168
 Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr
 1 5 10 15

Glu Val Glu Phe Arg Xaa Lys Lys
 20

<210> 169
 <211> 28
 <212> PRT
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<220>
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 <222> (26)
 <223> Xaa=oregon green

<220>
 <223> Description of Artificial Sequence: synthetic
 peptide sequence

<400> 169
 Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile
 1 5 10 15

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
 20 25

<210> 170
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic
 peptide sequence

<400> 170
 Ser Glu Val Asn Tyr Glu Val Glu Phe Arg
 1 5 10

<210> 171
 <211> 47
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic
 primer for site-directed mutagenesis of APP

<400> 171
 gagatctctg aaattagtta tgaagtagaa ttccgacatg actcagg

<210> 172
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
primer for site-directed mutagenesis of APP

<400> 172
tgagtcacgt cggaattcta cttcataact aatttcagag atctcctc 48

<210> 173
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
primer for site-directed mutagenesis of APP

<400> 173
gagatctctg aaagtagtta tgaagtagaa ttccgacatg actcagg 47

<210> 174
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
primer for site-directed mutagenesis of APP

<400> 174
tgagtcacgt cggaattcta cttcataact actttcagag atctcctc 48

<210> 175
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
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primer for site-directed mutagenesis of APP

<400> 175
gagatctctg aaattagtta tgaagcagaa ttccgacatg actcagg 47

<210> 176
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
primer for site-directed mutagenesis of APP

<400> 176
tgagtcacgt cggaattctg cttcataact aatttcagag atctcctc 48

<210> 177
<211> 5
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 177

Val Ser Tyr Glu Val
1 5

<210> 178

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 178

Val Ser Tyr Asp Ala
1 5

<210> 179

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 179

Ile Ser Tyr Glu Val
1 5

<210> 180

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 180

Val Lys Met Asp Ala
1 5

<210> 181

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic primer for generating mutant construct named MBPC125-SYEV

<400> 181
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<210> 182
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
primer for generating mutant construct named
MBPC125-SYEV

<400> 182
tgagtcattgt cggaattctg cctaataact cacttcagag atctcctc 48

<210> 183
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 183
Lys Lys Ser Tyr Glu Val
1 5

<210> 184
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 184
Val Glu Ala Asn Tyr Glu Val Glu Gly Glu
1 5 10

<210> 185
<211> 10
<212> PRT
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<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 185
Val Glu Ala Asn Tyr Ala Val Glu Gly Glu
1 5 10

<210> 186
<211> 8
<212> PRT
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<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 186
Asp Tyr Lys Asp Asp Asp Asp Lys
1 5

<210> 187
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 187
Ser Tyr Glu Ala
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<210> 188
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 188
Ser Tyr Ala Val
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<210> 189
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 189
Val Ser Tyr Glu Ala
1 5

<210> 190
<211> 13
<212> PRT
<213> Artificial sequence

<220>
<223> Description of artificial sequence: synthetic peptide sequence

<400> 190

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Trp Lys Lys
1 5 10

<210> 191

<211> 23

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<400> 191

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu
1 5 10 15

Val Glu Phe Arg Trp Lys Lys
20

<210> 192

<211> 15

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (1)..(1)

<223> amino acid at position 1 is biotinylated

<220>

<221> SITE

<222> (14)..(14)

<223> cys at position 14 is derivatized with an oregon green

<400> 192

Lys Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Lys Lys
1 5 10 15

<210> 193

<211> 22

<212> PRT

<213> Artificial sequence

<220>

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<220>

<221> SITE

<222> (1)..(1)

<223> amino acid at position 1 is biotinylated

<220>

<221> SITE

<222> (21)..(21)

<223> cys at position 21 is derivatized with an oregon green

<400> 193

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu
1 5 10 15

Val Glu Phe Arg Lys Lys
20

<210> 194

<211> 6806

<212> DNA

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic DNA sequence

<400> 194

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| gtcaattcag ggtggtgaat gtgaaaccag taacgttata cgatgtcgca gagtatgccg | 120 |
| gtgtctctta tcagaccgtt tcccgcgtgg tgaaccaggc cagccacgtt tctgcgaaaa | 180 |
| cgcgggaaaa agtggaagcg gcgatggcgg agctgaatta cattcccaac cgcgtggcac | 240 |
| aacaactggc gggcaaacag tcgttgctga ttggcgttgc cacctccagt ctggccctgc | 300 |
| acgcgccgtc gcaaattgtc gcggcgatta aatctcgcgc cgatcaactg ggtgccagcg | 360 |
| tggtggtgtc gatggtagaa cgaagcggcg tcgaagcctg taaagcggcg gtgcacaatc | 420 |
| ttctcgcgca acgcgtcagt gggctgatca ttaactatcc gctggatgac caggatgcca | 480 |
| ttgctgtgga agctgcctgc actaatgttc cggcggttatt tcttgatgtc tctgaccaga | 540 |
| cacccatcaa cagtattatt ttctcccatg aagacggtag gcgactgggc gtggagcatc | 600 |
| tggtcgcatt gggtcaccag caaatcgcgc tgtagcggg ccattaagt tctgtctcgg | 660 |
| cgcgtctgcg tctggctggc tggcataaat atctcactcg caatcaaatt cagccgatag | 720 |
| cggaaacggga aggcgactgg agtgccatgt ccggttttca acaaaccatg caaatgctga | 780 |
| atgagggcat cgttcccat gcgatgctgg ttgccaacga tcgatggcg ctgggcgcaa | 840 |
| tgcgcgccat taccgagtc gggctgcgcg ttggtgcgga tatctcggtg gtgggatacg | 900 |
| acgataccga agacagctca tgttatatcc cgcggttaac caccatcaaa caggattttc | 960 |
| gcctgctggg gcaaaccagc gtggaccgct tgctgcaact ctctcagggc caggcggtga | 1020 |
| agggcaatca gctgttgccc gtctcactgg tgaaaagaaa aaccaccctg gcgccaata | 1080 |
| cgc aaaccgc ctctccccgc gcgttggcgg attcattaat gcagctggca cgacaggttt | 1140 |
| cccgactgga aagcgggcag tgagcgcaac gcaattaatg tgagttagct cactcattag | 1200 |
| gcacaattct catgtttgac agcttatcat cgactgcacg gtgcaccaat gcttctggcg | 1260 |
| tcaggcagcc atcggaagct gtggtatggc tgtgcaggtc gtaaatcact gcataattcg | 1320 |
| tgtcgtcaa ggcgactcc cgttctggat aatgtttttt gcgcgcacat cataacggtt | 1380 |
| ctggcaaata ttctgaaatg agctgttgac aattaatcat cggctcgtat aatgtgtgga | 1440 |
| attgtgagcg gataacaatt tcacacagga aacagccagt ccgttttaggt gttttcacga | 1500 |
| gcacttcacc aacaaggacc atagattatg aaaactgaag aaggtaaact ggtaatctgg | 1560 |
| attaacggcg ataaaggcta taacggtctc gctgaagtcg gtaagaaatt cgagaaagat | 1620 |
| accggaatta aagtcaccgt tgagcatccg gataaactgg aagagaaatt cccacagggt | 1680 |
| gcggcaactg gcgatggccc tgacattatc ttctgggcac acgaccgctt tgggtggctac | 1740 |
| gctcaatctg gcctgttggc tgaaatcacc ccggacaaag cgttccagga caagctgtat | 1800 |
| ccgtttacct gggatgccgt acgttacaac ggcaagctga ttgcttacc gatcgtgtt | 1860 |
| gaagcgttat cgctgattta taacaaagat ctgctgccga acccgccaaa aacctgggaa | 1920 |

| | | | | | | |
|-------------|-------------|------------|-------------|-------------|-------------|------|
| gagatcccgg | cgctggataa | agaactgaaa | gcgaaaggta | agagcgcgct | gatgttcaac | 1980 |
| ctgcaagaac | cgtacttcac | ctggccgctg | attgctgctg | acgggggtta | tgcgttcaag | 2040 |
| tatgaaaacg | gcaagtacga | cattaaagac | gtgggcgtgg | ataacgctgg | cgcgaaagcg | 2100 |
| ggtctgacct | tcttggttga | cctgattaaa | aacaaacaca | tgaatgcaga | caccgattac | 2160 |
| tccatcgag | aagctgcctt | taataaaggc | gaaacagcga | tgaccatcaa | cgccccgtgg | 2220 |
| gcatgggtcca | acatcgacac | cagcaaagtg | aattatgggtg | taacgggtact | gccgaccttc | 2280 |
| aagggtcaac | catccaaacc | gttcgttggc | gtgctgagcg | caggatttaa | cgccgccagt | 2340 |
| ccgaacaaag | agctggcgaa | agagttcctc | gaaaactatc | tgctgactga | tgaaggctctg | 2400 |
| gaagcgggtta | ataaagacaa | accgctgggt | gccgtagcgc | tgaagtctta | cgaggaagag | 2460 |
| ttggcgaaag | atccacgtat | tgccgccacc | atggaaaacg | cccagaaagg | tgaaatcatg | 2520 |
| ccgaacatcc | cgcagatgtc | cgctttctgg | tatgccgtgc | gtactgcggg | gatcaacgcc | 2580 |
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| gtacccggcc | ggggatccat | cgagggtagg | gccgaccgag | gactgaccac | tcgaccaggt | 2700 |
| tctgggttga | caaatatcaa | gacggaggag | atctctgaag | tgaatctgga | tgcagaattc | 2760 |
| cgacatgact | caggatatga | agttcatcat | caaaaattgg | tgttctttgc | agaagatgtg | 2820 |
| ggttcaaaca | aagggtgcaat | cattggactc | atgggtggcg | gtgttgatcat | agcgacagt | 2880 |
| atcgatcatca | ccttggtgat | gctgaagaag | aaacagtaca | catccattca | tcattggtgtg | 2940 |
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| ggctacgaaa | atccaacct | caagttcttt | gagcagatgc | agaactagac | ccccgccaca | 3060 |
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| gaataatgtg | ggaagaaaca | aaccggtttt | atgatttact | cattatcgcc | ttttgacagc | 3180 |
| tgtgctgtaa | cacaagtaga | tgctgaact | tgaattaatc | cacacatcag | taatgtattc | 3240 |
| tatctctctt | tacattttgg | tctctatact | acattattaa | tgggttttgt | gtactgtaaa | 3300 |
| gaatttagct | gtatcaaact | agtaatagcc | tgaattcagt | aacctaaccc | tcgatggatc | 3360 |
| ctctagagtc | gacctgcagg | caagcttggc | actggccgtc | gttttacaac | gtcgtgactg | 3420 |
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| cccacctgac | cccatgccga | actcagaagt | gaaacgccgt | agcgccgatg | gtagtgtggg | 3720 |
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<211> 13

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> ACETYLATION (MCA)

<220>

<221> SITE

<222> (11)..(11)

<223> 2,4-dinitrophenyl group after the Lys at position 11

<400> 195

Ser Glu Val Asn Leu Asp Ala Glu Phe Arg Lys Arg Arg
1 5 10

<210> 196

<211> 12

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<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (4)..(4)

<223> amino acid at position 4 has been derivatized with a statine

<400> 196

Ser Glu Val Asn Val Ala Glu Phe Arg Gly Gly Cys
1 5 10

<210> 197

<211> 10

<212> PRT

<213> synthetic peptide sequence

<220>

<221> SITE

<222> (4)..(4)

<223> amino acid at position 4 has been derivatized with a statine

<220>

<221> SITE

<222> (10)..(10)

<223> amino acid at position 10 has been derivatized with Bodipy FL

<400> 197

| | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Val | Asn | Val | Ala | Glu | Phe | Arg | Cys |
| 1 | | | | 5 | | | | | 10 |